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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,726	11/20/2003	William R. Hancock	H0005279-1623 (256.153US)	8710
21186	7590	10/04/2005	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH 1600 TCF TOWER 121 SOUTH EIGHT STREET MINNEAPOLIS, MN 55402			RICHER, AARON M	
			ART UNIT	PAPER NUMBER
			2676	

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/717,726	HANCOCK ET AL.	
	Examiner	Art Unit	
	Aaron M. Richer	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☒ Claim(s) 5 and 7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Objections

1. Claim 5 is objected to because of the following informalities: Lines 2 and 3 of claim 5 recite "the frame buffer to include". This is grammatically incorrect in context. Appropriate correction is required.
2. Claim 7 is objected to because of the following informalities: Line 16 of claim 7 recites "received from the video source". This is a spelling error. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-7, 11, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Ozawa (U.S. Patent 5,757,364).
5. As to claims 1 and 12, Ozawa discloses an apparatus comprising:
a rendering engine to render a foreground of an image (fig. 1, element 302); and
a logic, separate from the rendering engine, to merge at least one background color with the foreground of the image (fig. 1, element 304; the background color is not

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merged until the foreground pixels of the window have been generated in fig. 1, element 102).

6. As to claims 2 and 3, Ozawa discloses a background color table to store a background color for a number of windows (col. 5, lines 19-30; fig. 1, element 132).

7. As to claim 4, Ozawa discloses a frame buffer to store pixels of the foreground, wherein the logic is to retrieve the color values of the foreground (fig. 1, element 303).

8. As to claim 5, Ozawa discloses an apparatus wherein the image is comprised of a number of windows (fig. 1, element 131), the frame buffer to include ping-pong type buffers to store color values of the foreground (fig. 1, elements 111, 112, 114 and 115; col. 4, lines 5-21; because one buffer is being read while the other is being written to, the A and B buffers read on ping-pong buffers), the frame buffer to include a Z buffer to store identification of a window where the pixels of the foreground are located (fig. 1, elements 131 and 113; col. 5, lines 1-18), wherein the apparatus further comprises a buffer select table to store an identification of one of the ping-pong type buffers that includes the color values of the foreground of the image (fig. 1, elements 116 and 119).

9. As to claim 6, Ozawa discloses an apparatus wherein the logic is to merge the at least one background color with the foreground of the image based on the identification of the window stored in the Z buffer and the identification of the one of the ping-pong type buffers stored in the buffer select table (col. 5, lines 19-45; a background color is merged if necessary according to an identifier).

10. As to claim 7, Ozawa discloses a system for generating a merged image, the system comprising:

a system memory (fig. 2, element 203);

a processor to generate graphics instructions based on execution of a graphics application, wherein the processor is to store the graphics instructions into the system memory (fig. 2, element 205);

a rendering engine coupled to the system memory through a graphics bus, the rendering engine to retrieve at least a part of the graphics instructions from the system memory and to render a foreground image based on the retrieved part of the graphics instructions (fig. 3, element 302);

and a background merge logic, separate from the rendering engine, and coupled to the system memory through a system bus (fig. 3, element 304), wherein the background merge logic is to retrieve at least a part of the graphics instructions from the system memory, wherein the background merge logic includes a background color table (fig. 1, element 132), the background merge logic to store at least one background color in the background color table based on the at least part of the graphics instructions, the background merge logic to merge the at least one background color received from the video source with a window of the rendered foreground image to generate the merged image (fig. 1, element 304).

11. As to claim 11, Ozawa discloses a display monitor, wherein the background merge logic is to output the merged image for display on the display monitor (fig. 2, element 207).

12. Claims 16 and 18-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Dawson (U.S. Patent 6,771,274).

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13. As to claim 16, Dawson discloses a method of rendering an image, the method comprising performing the following operations in a hardware logic that is separate from a rendering engine (fig. 5, element 240) that renders at least one foreground pixel for a window in the image:

retrieving the at least one foreground pixel from a frame buffer (col. 1, lines 52-55);

blending color data of a video with the at least one foreground pixel, upon determining that the video is in the background at a location of the foreground pixel (fig. 2, element 34; col. 4, lines 5-25);

and blending a background pixel with the at least one foreground pixel, upon determining that the video is not in the background at the location of the foreground pixel (fig. 2, element 30; col. 4, lines 37-58).

14. As to claim 18, Dawson discloses multiplying an alpha intensity value of the at least one foreground pixel with a value of the background pixel and adding a value of the foreground pixel with the value of the background pixel (fig. 5, elements 220, 230, and 250).

15. As to claim 19, Dawson discloses a method comprising:

rendering an image in a front-to-back order (fig. 1, fig. 5; the elements closest to the front are rendered first), wherein the rendering comprises:

rendering, by a rendering engine, foreground pixels of the image (fig. 5, element 240);

and blending, by a hardware logic that is separate from the rendering engine, the image based on a merger of a background fill pixels with the foreground pixels (fig. 5).

16. As to claim 20, Dawson discloses a method wherein forming the image based on the merger of the background fill pixels with the foreground pixels comprises:

assigning a weight of the background fill pixels relative to the foreground pixels based on alpha intensity values of the foreground pixels (fig. 5, elements 212 and 246);

and merging the background fill pixels with the foreground pixels based on the assigned weight of the background fill pixels (fig. 5).

17. As to claim 21, Dawson discloses a method further comprising displaying the image (fig. 5, element 298).

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

20. Claims 8-10, 13-15, and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable Ozawa in view of Dawson.

21. As to claim 8, Ozawa discloses an apparatus comprising a frame buffer to store a current read buffer, a current write buffer and a window buffer (fig. 1, elements 111, 112, 114, and 115) and wherein the background merge logic includes a buffer select table (fig. 1, element 132; the table includes a "display buffer designation" column), wherein the rendering engine is to store color values, a window identification for the pixels into the window buffer and buffer identification for the pixels in the buffer select table (fig. 1, element 132).

Ozawa does not disclose storing an attenuation value of pixels of the foreground image into the current write buffer. Dawson, however, discloses storing an alpha value, which corresponds to an "attenuation value", in a frame buffer (col. 1, lines 52-55). The motivation for this is to allow transparency blending (col. 1, lines 34-44). It would have been obvious to one skilled in the art to modify Ozawa to store an alpha value in a frame buffer in order to allow transparency blending as taught by Dawson.

22. As to claims 9, 10, and 13, Dawson further discloses a method wherein blending the background color into the image comprises:

 multiplying an alpha intensity value of the foreground with a value of the background color (fig. 5);

and adding a color value of the foreground with the value of the background color (fig. 5). The motivation for adding these features can be found in the rejection to claim 8.

23. As to claim 14, Ozawa discloses the color value of the foreground of the image are stored in an A buffer or a B buffer in a frame buffer (fig. 1, elements 111, 112, 114, and 115) and wherein the background color is stored in a background color table that is not in the frame buffer (fig. 1, element 132). Ozawa does not disclose a method wherein the alpha intensity value is stored in a frame buffer. Dawson, however, does disclose this (col. 1, lines 52-55), and the motivation for adding this feature can be found in the rejection to claim 8.

24. As to claim 15, Ozawa discloses selecting the background color based on an identification of a window (fig. 1, element 132; col. 5, lines 19-45).

25. As to claim 22, Ozawa discloses a method comprising:

rendering, by a rendering engine, color data of a foreground pixel for a window of the image (fig. 1, element 302);

storing, by the rendering engine, the color data for the foreground pixel into a current write buffer of a ping/pong buffer (fig. 1, element 309);

performing the following operations in a graphics logic having a background color table, independent of operations by the rendering engine (fig. 1, element 304):

retrieving an identification of the window (fig. 1, element 131);

retrieving, based on the identification of the window, an identification of a current read buffer of the ping/pong buffer from a buffer select table (col. 5, lines 19-45);

retrieving color data of a background pixel located at a same location in the image as the foreground pixel from the background color table based on the identification of the window and the identification of current read buffer (col. 5, lines 31-45);

and blending the adjusted color data of the background pixel with the color data of the foreground pixel (col. 5, lines 31-45).

Ozawa does not disclose color data including an alpha intensity value or adjusting an intensity of the color data of the background pixel based on the alpha intensity value. Dawson, however, does disclose these features (col. 1, lines 52-55; fig. 5), as recited in the rejections to claims 8-10 and 13. The motivation for adding them to the invention of Ozawa can be found in the rejection to claim 8.

26. As to claim 23, Ozawa discloses displaying the merged background pixel data and foreground pixel data (fig. 2, element 207).

27. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dawson in view of Ozawa.

28. As to claim 17, Dawson does not disclose a method wherein blending the background pixel with the at least one foreground pixel comprises retrieving the background pixel from a background color table that is internal to the hardware logic based on an identification of the window. Ozawa, however, discloses a background

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color table based on window identification (fig. 1, element 132). The motivation for this is to efficiently store background color information for quick access to a frame buffer (col. 5, lines 32-65). It would have been obvious to one skilled in the art to modify Dawson to use a color table based on window identification in order to allow access of a background color to a frame buffer as taught by Ozawa.

Conclusion

29. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to blending video backgrounds in general:

U.S. Patent 6,023,302 to MacInnis

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron M. Richer whose telephone number is (571) 272-7790. The examiner can normally be reached on weekdays from 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AMR
9/27/05

A handwritten signature in black ink, appearing to read "Matthew C. Bella". The signature is fluid and cursive, with the first name "Matthew" being more prominent than the last name "Bella".

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600